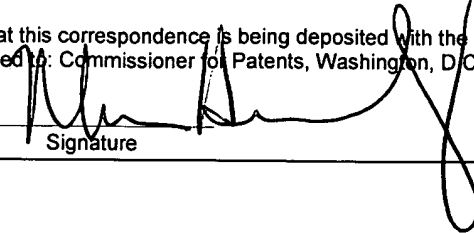


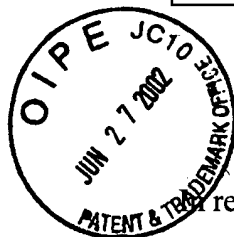
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PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Application of:
Wallace McKeehan
Yongde Luo

Group Art Unit: 1623

Serial No.: 09/990,578

Examiner: Not Yet Assigned

Filed: November 21, 2001

Atty. Dkt. No.: TAMK:232
12740.0232.NPUS00

For: FGF-AFFINITY CHROMATOGRAPHY

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

In accordance with 37 C.F.R. §§ 1.97(g),(h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees be required for any reason relating to the enclosed materials, the Commissioner is authorized to deduct said fees from Deposit Account No. 01-2508/12740.0232.NPUS00.

Respectfully submitted,



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Reg. No. 47,891

Patent Agent for Assignee

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Date: June 21, 2002

Form PTO-1449 (modified)


 Atty. Docket No.
 12740.0232.NPUS00
 (TAMK:232/REC)

 Serial No.
 09/990,578

List of Patents and Publications for Applicant's

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

 Applicant
 Wallace McKeehan and Yongde Luo

 Filing Date:
 November 21, 2001

 Group:
 1623

 U.S. Patent Documents
See Page 1

 Foreign Patent Documents
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 Other Art
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U.S. Patent Documents

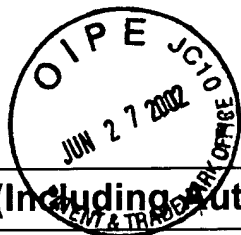
Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	5,965,530	10/12/99	Pierce et al.			
	A2	6,183,784	2/6/01	Read et al.			
	A3	5,843,883,	12/1/98	Gospodarowicz et al.			
	A4	5,034,520	7/23/91	Lormeau et al.			
	A5	5,807,982	9/15/98	McCaffrey et al.			
	A6	6,074,848	6/13/00	Gospodarowicz et al.			
	A7	5,655,870	9/9/1997	Rubin et al.			
	A8	5,891,655	4/6/1999	Ornitz			
	A9	6,127,347	10/3/2000	Chaudry et al.			

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1	WO 98/16642	4/23/1998	WIPO			
	B2						

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

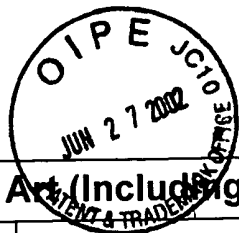
Exam. Init.	Ref. Des.	Citation
	C1	Cook N. et al.; "Platelet Factor 4 Efficiently Reverses Heparin Anticoagulation in the Rat Without Adverse Effects of Heparin-Protamine Complexes" (1992) Circulation 85 :1102-1109.
	C2	DiGabriele, A. D., et al.; "Structure of a Heparin-linked Biologically Active Dimer of Fibroblast Growth Factor" (1998) Nature 393 , 812-817.



RECEIVED

Other Art (Including Author, Title, Date Pertinent Pages, Etc.) 1 2002

Exam. Init.	Ref. Des.	Citation	TECH CENTER 1600/2900
	C3	Faham, S., et al.; "Diversity Does Make a Difference: Fibroblast Growth Factor-Heparin Interactions" (1998) <i>Curr. Opin. Struct. Biol.</i> 8 , 578-586.	
	C4	Guimond, S., et al.; "Activating and Inhibitory Heparin Sequences for FGF-2 (Basic FGF)" (1993) <i>J. Biol. Chem.</i> 268 , 23906-23914.	
	C5	Guimond, S. E., and Turnbull, J. E.; "Fibroblast Growth Factor Receptor Signalling is Dictated By Specific Heparan Sulphate Saccharides" (1999) <i>Curr. Biol.</i> 9 , 1343-1346.	
	C6	Herr, A. B., et al.; "Heparin-Induced Self-Association of Fibroblast Growth Factor-2" (1997) <i>J. Biol. Chem.</i> 272 , 16382-16389.	
	C7	Ishihara, M., et al.; "Importance of 2-O-Sulfate Groups of Uronate Residues in Heparin for Activation of FGF-1 and FGF-2" (1997) <i>J. Biochem. (Tokyo)</i> 121 , 345-349.	
	C8	Jang, J. H., et al.; "Heparan Sulfate is Required for Interaction and Activation of the Epithelial Cell Fibroblast Growth Factor Receptor-2IIb with Stromal-Derived Fibroblast Growth Factor-7" (1997) <i>In Vitro Cell Dev. Biol. Anim.</i> , 33 , 819-24.	
	C9	Edmunds, T. et al.; "Transgenically Produced Human Antithrombin: Structural and Functional Comparison to Human Plasma-Derived Antithrombin" (1998) <i>Blood</i> , 91 , 4561-4571.	
	C10	Kan, M., et al.; "Specificity for Fibroblast Growth Factors Determined by Heparan Sulfate in a Binary Complex with the Receptor Kinase" (1999) <i>J. Biol. Chem.</i> 274 , 15947-15952.	
	C11	Kan, M., et al.; "An Essential Heparin-Binding Domain in the Fibroblast Growth Factor Receptor Kinase" (1993) <i>Science</i> 259 , 1918-1921.	
	C12	Kan, M. et al.; "Divalent Cations and Heparin/Heparan Sulfate Cooperate to Control Assembly and Activity of the Fibroblast Growth Factor Receptor Complex" (1996) <i>J. Biol. Chem.</i> 271 , 26143-26148.	
	C13	Kato, M. et al.; "Physiological Degradation Converts the Soluble Syndecan-1 Ectomdomain from an Inhibitor to a Potent Activator of FGF-2" (1998) <i>Nat. Med.</i> 4 , 691-697.	
	C14	Kim, P. J., et al.; "Colocalization of Heparin and Receptor Binding Sites on Keratinocyte Growth Factor" (1998) <i>Biochemistry</i> 37 , 8853-8862.	
	C15	Lindahl, U., et al.; "Regulated Diversity of Heparan Sulfate" (1998) <i>J. Biol. Chem.</i> 273 , 24979-24982.	
	C16	Lookene, A., et al.; "Interaction of Lipoproteins with Heparan Sulfate Proteoglycans and with Lipoprotein lipase. Studies by Surface Plasmon Resonance Technique" (1997) <i>Biochemistry</i> 36 , 5267-5275.	
	C17	Lu, W., et al.; "Fibroblast Growth Factor-10" (1999) [published erratum appears in <i>J. Biol. Chem.</i> (1999) 274 , 28058] <i>J. Biol. Chem.</i> 274 , 12827-12834.	
	C18	Luo, Y., et al.; "Molecular Modeling and Deletion Mutagenesis Implicate the Nuclear Translocation Sequence in Structural Integrity of Fibroblast Growth Factor-1" (1996) <i>J. Biol. Chem.</i> 271 , 26876-26883.	

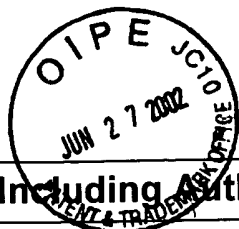


RECEIVED

JUL 1 2002

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C19 J	Luo, Y., et al.; "The Glycine Box: A Determinant of Specificity for Fibroblast Growth Factor" (1998) <i>Biochemistry</i> 37 , 16506-16515.
	C20 J	McKeehan, W. L., et al.; "The Heparan Sulfate-Fibroblast Growth Factor Family: Diversity of Structure and Function" (1998) <i>Prog. Nucleic Acid Res. Mol. Biol.</i> 59 , 135-176.
	C21 J	McKeehan, W. L., et al.; "Requirement for Anticoagulant Heparan Sulfate in the Fibroblast Growth Factor Receptor Complex" (1999) <i>J. Biol. Chem.</i> 274 , 21511-21514.
	C22 J	Mikhailov, D., et al.; "NMR Solution Conformation of heparin-Derived Hexasaccharide" (1997) <i>Biochem. J.</i> 328 , 51-61.
	C23 J	Moy, F. J., et al.; "Properly Oriented Heparin-Decasaccharide-Induced Dimers are the Biologically Active Form of basic Fibroblast Growth Factor" (1997) <i>Biochemistry</i> 36 , 4782-4791.
	C24 J	Ornitz, D. M., et al.; "FGF Binding and FGF Receptor Activation by Synthetic Heparan-Derived Di- and Trisaccharides" (1995) <i>Science</i> 268 , 432-436.
	C25 J	Ornitz, D. M.; "FGFs, Heparan Sulfate and FGFRs: Complex Interactions Essential for Development" (2000) <i>Bioessays</i> 22 , 108-112.
	C26 J	Pellegrini, L. et al.; "Crystal Structure of Fibroblast Growth Factor Receptor Ectodomain Bound to Ligand and Heparin" (2000) <i>Nature</i> , 407 , 1029-1034.
	C27 J	Rezaie, A. R., and Olson, S. T.; "Calcium Enhances Heparin Catalysis of the Antithrombin-Factor Xa Reaction by Promoting the Assembly of an Intermediate Heparin - Antithrombin - Factor Xa Bridging Complex. Demonstration by Rapid Kinetics Studies" (2000) <i>Biochemistry</i> 39 , 12083-12090.
	C28 J	Ron, D. et al.; "Expression of Biologically Active Recombinant Keratinocyte Growth Factor" (1993) <i>J. Biol. Chem.</i> 268 , 2984-2988.
	C29 J	Rosenberg, R. D., et al.; "Perspectives Series: Cell Adhesion in Vascular Biology; Heparan Sulfate Proteoglycans of the Cardiovascular System" (1997) <i>J. Clin. Invest.</i> 99 , 2062-2070.
	C30 J	Schlessinger, J. et al.; "Crystal Structure of a Ternary FGF-FGFR-Heparin Complex Reveals a Dual Role for Heparin FGFR Binding and Dimerization" (2000) <i>Mol. Cell.</i> 6 , 743-750.
	C31 J	Shriver, Z., et al.; "Sequencing of 3-O Sulfate Containing Heparin Decasaccharides with a Partial Antithrombin III Binding Site" (2000) <i>Proc. Natl. Acad. Sci. USA</i> , 97 , 10359-10364.
	C32 J	Shriver, Z. et al.; "Cleavage of the Antithrombin III binding site in Heparin by Heparinases and its Implication in the Generation of Low Molecular Weight Heparin" (2000) <i>Proc. Natl. Acad. Sci. USA</i> , 97 , 10365-10370.
	C33 J	Toida, T., et al.; "Enzymatic Preparation of Heparin Oligosaccharides Containing Antithrombin III Binding Sites" (1996) <i>J. Biol. Chem.</i> 271 , 32040-32047.



RECEIVED

Other Art (Including Author, Title, Date Pertinent Pages, Etc.) 1 2002

TECH CENTER 1600/2900

Exam. Init.	Ref. Des.	Citation
	C34 J	Uematsu F, et al.; "Ligand Binding Properties of Binary Complexes of Heparin and Immunoglobulin-like Modules of FGF Receptor 2" (2000) Biochem. Biophys. Res. Commun. 272 , 830-836.
	C35 J	Vlodavsky, I., et al.; "Involvement of Heparan Sulfate and Related Molecules in Sequenstration and Growth promoting Activity of Fibroblast Growth Factor" (1996) Cancer Metastasis Rev. 15 , 177-186.
	C36 J	Waksman, G., and Herr, A. B.; "New Insights into Heparin-Induced FGF Oligomerization" (1998) Nat. Struct. Biol. 5 , 527-530.
	C37 J	Wang, F., et al.; "Alternately Spliced NH ₂ - Terminal Immunoglobulin-like Loop I in the Ectodomain of the Fibroblast Growth Factor (FGF) Receptor 1 Lowers Affinity for Both Heparin and FGF-1" (1995) J. Biol. Chem. 270 , 10222-10230.
	C38 J	Wang, F., et al.; "Common and Specific Determinants for Fibroblast Growth Factors in the Ectodomain of the Receptor Kinase Complex" (1999) Biochemistry 38 , 160-171.
	C39 J	Ye, S., et al.; "Exon Switching and Activation of Stromal and Embryonic Fibroblast Growth Factor (FGF)-FGF Receptor Genes in Prostate Epithelial Cells Accompany Stromal Independence and Malignancy" (2001) Biochemistry 40 , 14429-14439.
	C40 J	J. Choay, et al.; "Structure-Activity Relationship in Heparin: A Synthetic Pentasaccharide with High Affinity for Antithrobin III and Eliciting High Anti-Factor Xa Activity" (1983) Biochemical and Biophysical Research Communications, Vol. 116, No. 2, 492-499
	C41 J	Duraikkannu Loganathan, et al.; "Structural Variation in the Antithrombin III Binding Site Region and Its Occurrence in Heparin from Different Sources" (1990) Biochemistry 29 , 4362-4368.
	C42 J	Alireza R. Rezaie, "Heparin-Binding Exosite of Factor Xa" (2000) TCM Vol. 10, No. 8, 333-338.
	C43 J	Tahir Ahmed, et al., "Inhibition of Allergic Late Airway Responses by Inhaled Heparin-Derived Oligosaccharides" (2000) J. Appl. Physiol 88 , 1721-1729.
	C44 J	E. Sache, et al.; "Partially N-Desulfated Heparin as a Non-Anticoagulant Heparin: Some Physico-Chemical and Biological Properties" (1989) Thrombosis Research 55 , Vol. 55, No. 2, 247-258.
	C45 J	Guangli Yu, et al.; "Heparinase I Acts on a Synthetic Heparin Pentasaccharide Corresponding to the Antithrombin III Binding Site" (2000) Thrombosis Research 100 , 549-556.
	C46 J	Allison Fryer, et al.; "Selective O-Desulfation Produces Nonanticoagulant Heparin that Retains Pharmacological Activity in the Lung ^{1,2} " (1997) The Journal Of Pharmacology and Experimental Therapeutics, Vol. 282, No. 1, 282 , 208-219.



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TECH CENTER 1600/2900

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C47	Peter C. Kouretas, et al.; "Non-Anticoagulant Heparin Increases Endothelial Nitric Oxide Synthase Activity: Role of Inhibitory Guanine Nucleotide Proteins" (1998) J Mol Cell Cardiol 30 , 2669-2682.
	C48	Shinobu Mochizuki, et al.; "Expression and Characterization of Recombinant Human Antithrombin III in Pichia Pastoris" (2001) Protein Expression and Purification 23 , 55-65.
	C49	Alexander N. Plotnikow, et al.; "Crystal Structure of Fibroblast Growth Factor 9 Reveals Regions Implicated in Dimerization and Autoinhibition" (2001) The Journal of Biological Chemistry, Vol. 276, No. 6, 4322-4329.
	C50	Paola Bellosta, et al.; "Identification of Receptor and Heparin Binding Sites in Fibroblast Growth Factor 4 by Structure-Based Mutagenesis" (2001) Molecular and Cellular Biology, 5946-5957.
	C51	David A. Pye, et al.; "Regulation of FGF-1 Mitogenic Activity by Heparan Sulfate Oligosaccharides is Dependent on Specific Structural Features: Differential Requirements for the Modulation of FGF-1 and FGF-2" (2000) Glycobiology, Vol. 10, No. 11, 1183-1192.
	C52	J.N. Shanberge, et al.; "Interrelationship of Protamine and Platelet Factor 4 in the Neutralization of Heparin" (1987) Thrombosis Research 46 , 89-100.
	C53	Man-Chiu Poon, et al.; "Platelet Factor Four and Protamine Sulfate Neutralization of Heparin Fractionated According to Anionic Charge Density" (1982) Thromb Haemostas (Stuttgart) 47 (2), 162-165.
	C54	Thierry Burnouf, et al.; "Affinity Chromatography in the Industrial Purification of Plasma Proteins for Therapeutic Use" (2001) J. Biochem. Biophys. Methods 49 , 575-586.